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Accessibility to Dental Health Care: Risk Factor in Oral Health at Rural Area Community

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Abstract

Evaluation of oral health represents a systematic approach of using all resources to improve the health status of the population in the most efficient way and to reduce inequalities. Providing a good health status for each individual, family and community, has determined WHO to launch a concept entitled „Health 21 – Health for all in the 21st century" which also includes oral health. A rural area community living in the Timis County represents the target group studied in this project. Research mainly focused on accessibility, addressability and motivation of the subjects regarding dental medicine services in the rural and urban area. Accessibility of dentists in the rural area is very low. The above statements reflect the interrelationship between oral diseases and the ensemble of economical, social and cultural processes, supporting the importance of dental medical care and justifying the social effort to organize them effectively.

Keywords: oral health; health education; oral health status; accessibility; rural area

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Introduction

The definition of oral health is the status of oral and related tissues that enable an individual to eat, speak and socialize without active disease, discomfort or embarrassment and contributes to the general well being of the individual (Department of Health, 1994). Oral health is part of general health and should not be considered in isolation, because is a part of the individual's health related with quality of life (Cunningham *et al.*, 2001). For maintaining oral health status, is important to make regular dental visits to oral health care services to improve preventive oral health habits, and to ensure prompt diagnosis and management of dental anomalies, and screening of oral cancer. Utilization of health care services is measured by the number of visits to oral health care centres per year, the number of people who made at least one visit in the previous year, and by reason to addressability for oral health services (Onyejaka, Folayan, & Folaranmi, 2016; Oral Health Eurobarometer, 2009; Manski, Moeller, & Maas, 2011). Reports from Romania show very low utilization of oral health care services and visits are undertaken for symptomatic reasons (Matei *et al*., 2015). Evaluating oral health needs represents a systematic approach to establish the fact that health services use all resources to improve the health status of the population in the most efficient way and to reduce inequalities. In general, health is determined by more elements than physical well being (Petersen *et al.*, 2002). Providing a good health status for each individual, family and community, has determined WHO to launch a concept entitled „Health 21 – Health for all in the 21st century" which also includes oral health (Petersen *et al.*, 2001). In oral health, care utilization appears to disparities that have been attributed socioeconomic and individual behavioural factors (Petersen, 2003; Petersen, 1995; Chen *et al*., 1997; Varenne, Petersen, Ouattara, 2006). Children's dental care services use in the most developing countries is not a usual routine (Petersen, 2003). Previous studies demonstrated that family related factors such as socio-economic status, parents' education, family size and birth rank influence access of oral health care services by people from rural areas, but not only (Silk, & Kwok, 2017; Pippi *et al.*, 2014). There was a strong association between socioeconomic status and utilization of oral health care services demonstrated in Chile (McGrath, Bedi, & Dhawan 1999), with family income having a significant negative correlation with dental visit (Kakatkar *et al*., 2011). In Nigeria, Chile and Brazil, children from low socio-economic backgrounds that access oral healthcare services are not going so often than the ones from high socio-economic background (Lopez, & Baelum, 2007; Machry *et al.*, 2013).

Oral diseases among older adults are prevalent, and this is a major public health problem, because screening of oral cancer or early stages they did not do oral cancer diagnosis, but public attention of this problems regarding this is quite limited. Many older adults experience limited access to oral care services because of the limited budget or limited distance access for an oral health care centre (Lee

et al., 2016). Family structure is associated with self-reported dental usage of dental care services pattern. In Britain and the United States, children of single mothers with more than two children have poorer health outcomes (Heck & Parker, 2002; McGrath, Yeung, & Bedi, 2002.). In addition, children growing up with single mothers and stepfathers were less likely to visit the dentist regularly compared with those in conventional nuclear families in Germany (Listl, 2011). The rural Timis County community has limited access to oral healthcare. One approach is to reduce such health inequities is to expand the involvement of primary care physicians in the provision of oral healthcare. Expanding oral healthcare access through primary care physicians will be necessary but, requires adequate training in medical school, residency, and in continuing education courses (Roberts & Erwin, 2015).

This study aimed at determining the association between socio-economic status, type of family, form of parenthood, and accessibility to oral health care services by population from rural area in Romania. It also identified barriers and facilitators to utilization of oral health care services by this population. Will be used findings from the study in planning interventions to improve utilization of oral health services in the study population.

Material and method

A rural area from the Timis County represented the target group used in this study. Questonaire people made evaluation of the oral health care accessibility from rural area. Taking into account the Eurobarometer 2009 study, questionnaires were elaborated (Oral Health Eurobarometer, 2009; Petersen, 2005), in order to have the most precise comparison degree. The divided questionnaire is into five sections: socio-demographic, nutrition, life style, oral hygiene and accessibility to dental medicine services. A pilot study validated the questionnaire on 70 subjects, 40 coming from the rural area and 30 from the urban area. For validation, they evaluated the reproducibility, validity (accuracy), acceptability and practicability of the questionnaire within the studied population. The calculation of the k concordance coefficient determined the reproducibility, which allowed the analysis of intra- and inter-investigator variation. To assess the validity, sensitivity, specificity, positive predictive value and negative predictive value of the measuring instrument towards medical filing, was calculated.

Questionnaire validation: Because of the pilot study, the Cronbach index for the whole questionnaire was $\alpha = 0.91$, indicating a very good consistency and relevance for the questions. Correlations between sub-groups were good: between nutrition and oral hygiene – 0.67, between socio-demographic status and oral hygiene – 0.59, between vicious habits and oral hygiene – 0.63, between accessibility and oral hygiene – 0.78.

Data collection: Data were collected by face-to-face field interviews, based on structured questionnaires, conducted either in households or in the medical examination centres.

Data analysis: The obtained data was included in an Excel database. The database was statistically analyzed with Stata 5.0 and Epi Info 4.3.2 programs. The studied variables descriptively analyzed, calculating means for quantitative variables and frequencies for qualitative ones created a new database consisting of 456 questionnaires for adults and 243 for children. The questionnaires were adapted for different age groups in order to investigate whether there are differences according to the living environment.

There was a sample of 699 subjects, 321 from the urban and 378 from the rural. For the urban area, was chosen Lugoj and Faget city and the rural area was the area surrounding the two cities. The investigated age groups were from 6 to 18 years old, 18-70 years old, being most relevant; the first one represents the period of mixed dentition and the second one the period of adult dentition.

Results

Socio-demographic profile of study participants

Six hundred ninety-nine pupils participated in the study. The mean age±(SD) of the study participants was 33.33±(20.97) years. *Table 1* shows the general characteristics of the study participants. Most of the study participants were from monogamous family (74.53%). Also, 31.51 % of participants come from families with medium incomes (2000- 5000 lei) and just 9.51% are from families with high incomes.

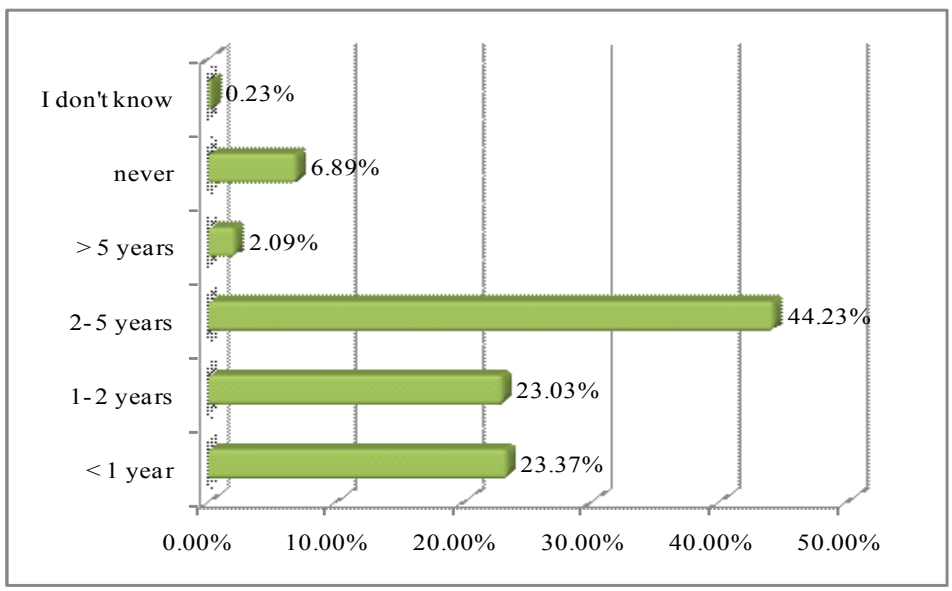
Utilization of dental services

Visit frequency to a dentist during the last 12 months. It has been proven that only 23.37% of the studied population has had a visit to the dentist during the last year and approximately 7% never went to the dentist. Out of those who went to the dentist, 70% had an addressability of 2 to 4 times, which represents a more complex treatment and not only a check-up (*Figure* 1).

Table 1. General characteristics of the study participants (N=699)

	Frequency (%)
Age	
< 18 years	243 (34.76%)
18- 25 years	182 (26.04%)
25- 50 years	162 (23.27%)
> 50 years	112 (16.02%)
Gender	
feminine	380 (54.36%)
masculine	319 (45.63%)
Provenience area	
urban	321 (45.92%)
rural	378 (54.07%)
Type of family	
monogamy	521 (74.535%)
polygamy	178 (25.46%)
Social economic family	
< 1000 lei	68 (9.72%)
1000- 2000 lei	343 (49.07%)
2000- 5000lei	221 (31.61%)
>5000 lei	67 (9.51%)
Education	
primary school	38 (5.43%)
secondary school	224 (32.045%)
high school	168 (22.88%)
technical school	145 (20.74%)
college	37 (5.29%)
faculty	87 (12.44%)

Figure 1. Time period since the last visit to the dentist



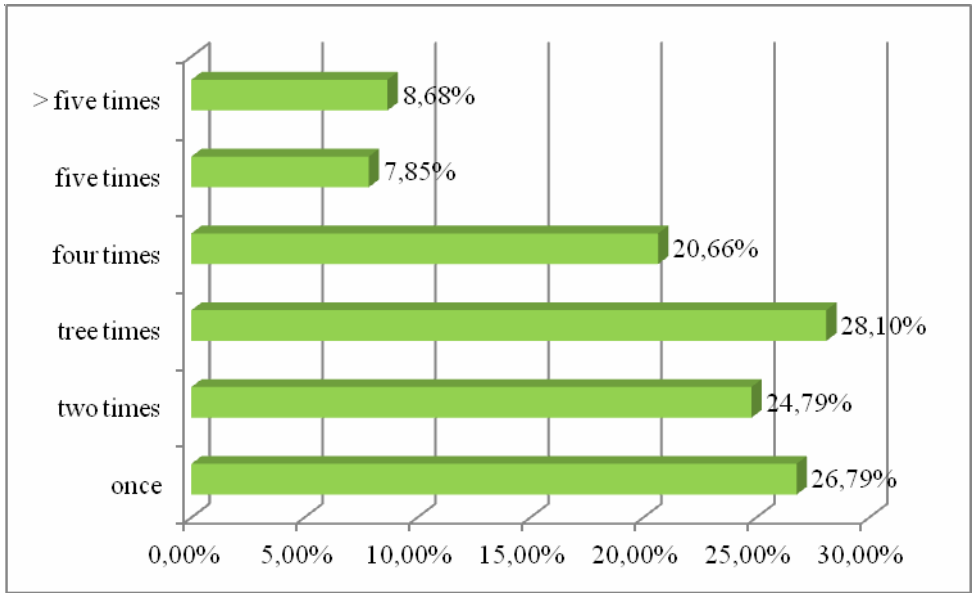


Figure 2. Frequency of addressability to the dentist during the last 12 month

Only 23.37% of the studied population addressed to a dentist during the last year; for most of the responders (44.23%), the last visit was 2 to 5 years ago. 7% never went to the dentist. The first reason for male to go to the dentist is the emergency pain (41.4%), but this is also for females also (37.65%). People from rural area have the main reason to go to the dentist the emergency treatment (44.60%), but also the people from urban area (32.52%). There are not significant difference between sex (p=0,065) or the area from where the patients are (p=0.055) when we speak about the main reason to go to the dentistry.

There was no statistically significant difference in the reasons given for non-utilization of dental services for education (p =0.72), form of social status (p= 0.56), family incomes (p=0.12) and provenience (p=0.058).

Accessibility to health dental care: Questioned regarding the accessibility to a dentist in less than 30 minutes, 65.99% of the responders answered affirmative, which guides us on the necessity of existing dental offices evenly divided both in the urban as well as in the rural area. What the overall accessibility is concerned, 76.18% of the subjects gave an affirmative response (*Figure* 3).

Table 2. Main reasons for addressing to a dental doctor

	Check-ups evaluation	Routine treatment	Emergency treatment	Spontaneous	Don't know
Sex p=0.065					
feminine	27.06%	22.35%	37.65%	2.35%	7.84%
masculine	27.42%	19.35%	41.40%	1.08%	5.38%
Provenience p=0.055					
urban	39.05%	29.92%	32.52%	0.79%	3.15%
rural	21.28%	17.54%	44.60%	2.37%	9.00%
Education p=0.055					
primary school	27.40%	19.18%	34.25%	0.00%	12.33%
secondary school	40.00%	12.38%	35.24%	0.00%	6.67%
high school	16.67%	25.00%	47.22%	4.17%	5.56%
technical school	18.75%	18.75%	58.33%	0.00%	4.17%
college	27.78%	16.67%	50.00%	0.00%	0.00%
university	13.73%	45.10%	33.33%	5.88%	0.00%
Social status p=0.63					
employee	20.54%	25.89%	43.75%	3.57%	2.68%
an employee	28.73%	19.27%	40.73%	0.73%	6.55%
Family incomes p=0.07					
<1000 lei	29.90%	18.56%	40.21%	1.03%	3.09%
1000-2000 lei	24.51%	22.55%	35.29%	3.92%	9.80%
2000-5000 lei	22.45%	34.69%	34.69%	2.04%	2.04%
>5000 lei	26.32%	15.79%	42.11%	10.53%	5.26%
don't know	27.75%	18.50%	41.62%	0.58%	8.67%

Table 3. Reasons to miss the dental checkups to a dentist

	Too expensive	Anxiety of dentist	Absence of dental ills	Is far away	indentation/ dental prosthesis	Other cause	don't know
Sex p=0,06							
feminine	18.83%	20.39%	20.00%	3.14%	0.78%	0.78%	15.69%
masculine	24.20%	16.13%	22.04%	2.69%	0.54%	0.54%	17.20%
Provenience p=0,058							
urban	12.04%	22.05%	24.41%	2.36%	1.57%	1.57%	11.81%
rural	18.96%	13.27%	19.91%	2.84%	0.47%	0.00%	17.54%
Education p=0,72							
primary school	17.81%	13.70%	24.66%	4.11%	0.00%	0.00%	10.96%
secondary school	17.14%	23.81%	19.05%	1.90%	0.00%	0.95%	22.86%
highs cool	36.11%	19.44%	13.89%	2.78%	1.39%	2.78%	11.11%
technical school	27.08%	29.17%	16.67%	4.17%	2.08%	0.00%	14.58%
college	19.45%	19.44%	27.78%	2.78%	0.00%	0.00%	13.89%
university	17.65%	17.65%	31.37%	1.96%	0.00%	0.00%	9.80%
Social status p=0.56							
employee	30.36%	19.64%	21.43%	1.79%	1.79%	0.00%	12.50%
unemployed	18.91%	20.73%	22.18%	3.27%	0.00%	0.73%	15.64%
Family incomes p=0.12							
< 1000 lei	18.56%	19.59%	29.90%	6.19%	0.00%	1.03%	8.25%
1000- 2000 lei	20.59%	14.71%	17.65%	2.94%	1.96%	0.00%	16.67%
2000- 5000 lei	22.45%	20.41%	20.41%	2.04%	0.00%	0.00%	12.24%
high	15.79%	36.84%	21.05%	0.00%	0.00%	0.00%	10.53%
don't know	16.76%	19.08%	17.92%	1.73%	0.58%	1.16%	22.54%

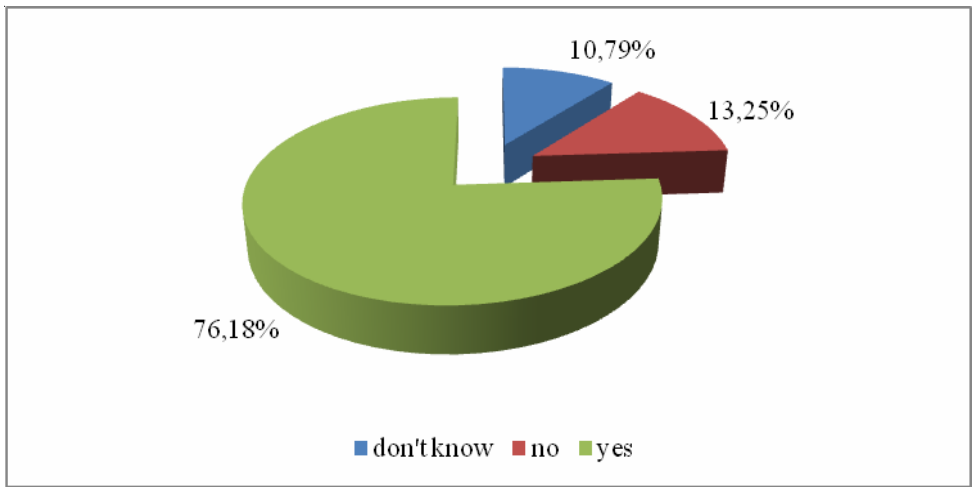


Figure 3. Overall accesibility to health dental care

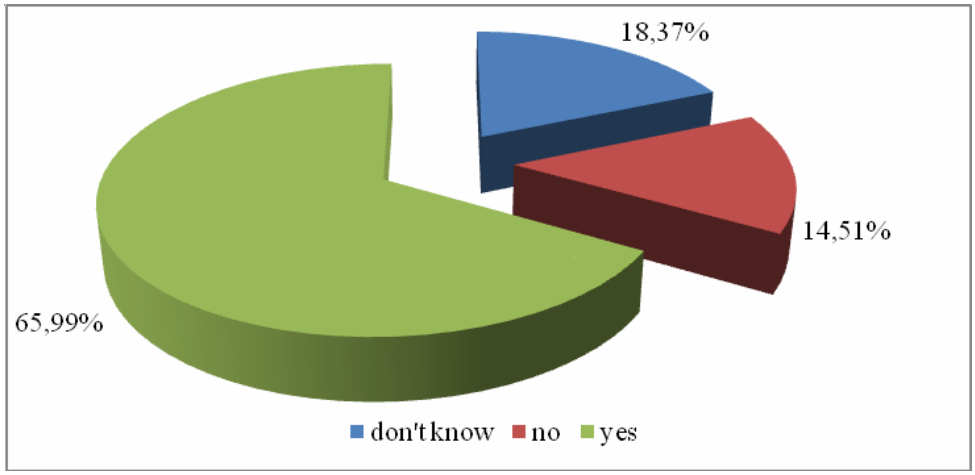


Figure 4. Accesibility to health dental care within 30 minutes

Prefered dental offices. Most of the questioned subjects (48.42%) address a private office or clinic. A quarter choose the closest office, no matter if it has a collaboration contract and only 17.12% prefer offices that work with the National Health Insurance House (*Figure 5*).

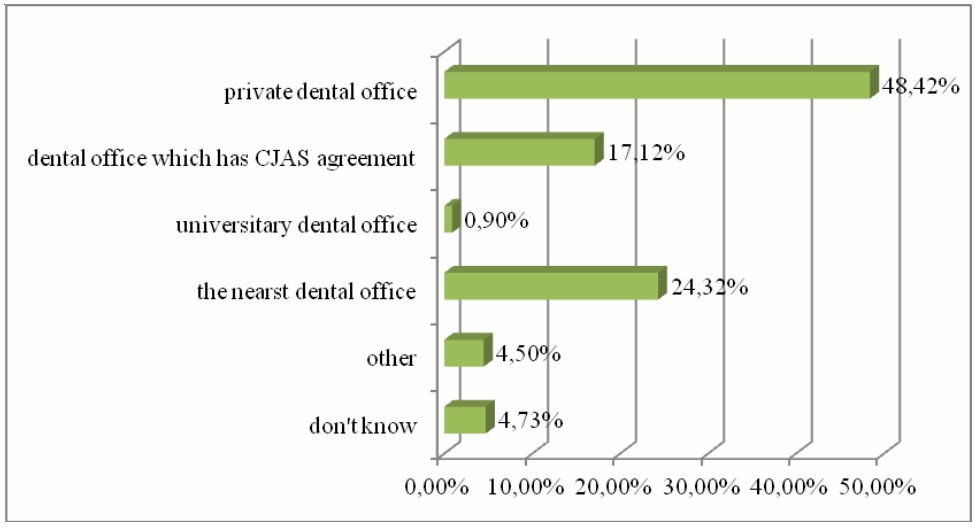


Figure 5. Prefered type of medical care

Discussions

Our study aimed to evaluate attitudes towards oral health and the accessibility of the population to oral health services, based on a psychometric questionnaire. The study which followed the validation of the questionnaire, tried to eliminate all those limitations. Regarding addressability to the dentist, 9% of the responders went to the dentist 5 years ago and 2% never went to the dentist. Fear of the dentist represents the most common reason for not going to a check-up. This is why dentists should pay more attention to the attitude towards the patient. During this relationship, the dentist has to understand, the patient doesn't have a natural behaviour, determined by the psychological discomfort caused by suffering, as well as the feeling of distrust towards the dentist and the medical possibilities. The relationship between the doctor and the patients is asymmetrical, referring to two persons with different social backgrounds. The dentist has to have a good collaboration relationship, based on a psychological approach. One does not have to forget that patients are not only „mouths to fix" but also human beings who need to be treated with respect. Nevertheless, a quarter of the population, did not afford to pay for dental treatments, fact that is very concerning, because economic status should not prevail over general or oral health. Addressability to the dentist during the last year is more frequent in the urban area, comparative to the rural area. A study regarding accessibility to dental medical services has been done by the Romanian Institute for Evaluation and Strategy, at the initiative of Radu Campian, the sample size consisting of 1,200 persons aged 18 and over, in March 2011 (Dancu & Campeanu, 2012). According to the conclusions of the study, 48% got o the dentist once a year or less, and 12% do not go at all. These percents reveal very low addressability to dental medicine services even in the urban area. 37% admit only going to the dentist when pain occurs, 45% do not go because of financial reasons (Oral Health Eurobarometer, 2009).

Our finding that people from rural are less likely to utilize the oral health care services than those staying in urban area is in line with findings in an earlier study in which shows that people from developed area has better accessibility than the others have and delayed their treatment. Programmes designed to address barrier to oral health care utilization for children will not only need to overcome barriers created by socio-economic status but also reduce the vulnerability of children living with foster parents, and the children from low incomes families. Compared with western industrialized countries, where about 40–80% of the adults would have visited a dentist within one year (Petersen, 1995; Chen *et al*., 1997; Kiyak & Reichmuth, 2005), the use of professional oral health care services is alarmingly low in Timis County, Romania. Despite differences in study design, this pattern accords with previous surveys carried out in countries from Africa like Nigeria (Ozeigbe & Esan, 2013; Adegbembo, 1994) and Ivory Coast (Samba *et al*., 2004).

The socio-economic level of the household is a key determinant of oral health seeking behaviour. In our study, the socio-economic standard of the household measured by measuring incomes from the families, which was strongly associated with the use of dental health care services. Accessibility and addressability to dental services share a close relationship with the educational level in general but also medical and oral health education level. What the accesibility to dental services is concerned, it is lower, because of the geographical position, of the infrastructure and the unsatisfying dental assistance. In the urban area, patients prefer a private office or an office that works in collaboration with the National Helath Insurance house. Accesibility to dental services in the rural area being more scarce, responders prefer to address the closest dental office.

The perceived importance of oral health problems emerged as a significant factor in health service utilization in our study (Arheiam, Masoud, & Bernabe, 2014). It was not a surprise that studied people who paid less attention to oral diseases compared to general diseases were unlikely to seek health services. Fear and anxiety are often suggested as barriers to use of dental services (Blanchard *et al*, 2012). This was not the case in the present study, as those who were afraid of dentists were more likely to use dental services. This reflects the fact that dental visits are very unpleasant because the service often rendered for pain relief is extraction of teeth (Carlisle, Larkins, & Croker, 2017).

Access to health care facilities seems to be less of a problem in urban than in rural areas, although travel expenditure tends to increase rapidly from a small village to a big city. Dental visits reasons are directly related to the presence of dental caries. People utilize dental care services when they have a strong pain (Piovesan *et al.*, 2011; Villalobos-Rodelo *et al*., 2010; Machry *et al*., 2013; Pivovar *et al*., 2017) that is a consequence of untreated dental caries, but is necessary to use this visits to making a screening for oral cancer, which incidence is increase.

The main limitation of the pilot study was the sample selection. This could show bias given the fact that it consisted only of volunteers. The extremely positive attitude may lead to errors and does not reflect the attitude of the entire population. Despite those limitations, our study showed that the development of a new instrument which evaluates attitudes towards some important aspects of oral health (socio-demographic environment, nutrition, oral hygiene, accessibility to dental services).

Conclusions

Addressability to dental services is low, 9% declaring their last visit to the dentist 5 years ago and 2% never got to a dentist. In the urban area, patients prefer addressing a private practice or one that collaborates with the National Health Insurance house. From the rural area of Timis County, Romania we are concerned about the accessibility, because is lower due to the geographical position, and the unsatisfying dental medicine assistance responders address the closest medical practice.

Accessibility of dentists in the rural area is very low. The above statements reflect the interrelationship between oral diseases and the ensemble of economical, social and cultural processes, supporting the importance of dental medical care and justifying the social effort to organize them effectively.

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